

Amendments to the Claims:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An Nb₃Sn-based superconductive wire comprising:

a bronze/filament aggregate obtained by placing a [lot of] plurality of niobium (Nb) filaments or niobium alloy filaments in a copper (Cu)-tin (Sn)-based alloy matrix[.]; and

heat treating said aggregate to form said Nb₃Sn-based superconductive wire;

wherein said niobium or niobium alloy filament constituting said bronze/filament aggregate is a composite filament obtained by combining niobium or a niobium alloy with a filament reinforcing material having mechanical strength under temperature not more than room temperature after thermal treatment for producing an Nb₃Sn-based superconductive compound, larger than the mechanical strength of said niobium or niobium alloy;

wherein said composite filament comprises said filament reinforcing material in volume fraction of 0.05 to 0.65 in the composite filament;

wherein the volume ratio of the niobium or niobium alloy forming said composite filament to the copper-tin-based alloy matrix is 0.8 or more and 2.5 or less and the volume ratio of the composite filament to the copper-tin-based alloy matrix is 0.3 or more.

Claim 2 (currently amended): The Nb₃Sn-based superconductive wire according to Claim 1 wherein said niobium alloy is a first niobium alloy, and said filament reinforcing material is composed of a second niobium alloy, tantalum (Ta), tantalum alloy, tungsten (W), tungsten alloy, titanium (Ti), titanium alloy, molybdenum (Mo), molybdenum alloy, vanadium (V), vanadium alloy, zirconium (Zr), zirconium alloy, hafnium (Hf) or hafnium alloy.

Claim 3 (canceled)

Claim 4 (original): The Nb₃Sn-based superconductive wire according to Claim 1 wherein said composite filament has a diameter of 15 μm or less.

Claim 5 (canceled)

Claim 6 (new): A method of forming a Nb₃Sn-based superconductive wire, comprising:

combining niobium or a niobium alloy with a filament reinforcing material to form a composite filament having a volume ratio of the filament reinforcing material to the composite filament of 0.05 to 0.65;

placing the composite filament in a copper (Cu)-tin (Sn)-based alloy matrix to form a bronze/filament aggregate, having a volume ratio of the niobium or the niobium alloy forming said composite filament to the copper-tin-based alloy matrix of 0.8 or more

and 2.5 or less and a volume ratio of the composite filament to the copper-tin-based alloy matrix of 0.3 or more; and

heat treating the bronze/filament aggregate to form a Nb₃Sn-based superconductive wire;

wherein, after application the heat treating, the filament reinforcing material has a mechanical strength at room temperature or less, greater than the mechanical strength of the niobium or the niobium alloy.

Claim 7 (new): The method according to claim 6, wherein:

the niobium alloy is a first niobium alloy, and the filament reinforcing material is composed of a second niobium alloy, tantalum (Ta), tantalum alloy, tungsten (W), tungsten alloy, titanium (Ti), titanium alloy, molybdenum (Mo), molybdenum alloy, vanadium (V), vanadium alloy, zirconium (Zr), zirconium alloy, hafnium (Hf) or hafnium alloy.

Claim 8 (new): The method according to claim 6, wherein the composite filament has a diameter of 15 μm or less.

Claim 9 (new): An aggregate for forming Nb₃Sn-based superconductive wire, comprising:

a composite filament, including niobium or a niobium alloy and a filament reinforcing material having a volume ratio of the filament reinforcing material to the composite filament of 0.05 to 0.65; and

a copper (Cu)-tin (Sn)-based alloy matrix in which the composite filament is embedded;

wherein a volume ratio of the niobium or the niobium alloy forming the composite filament to the copper-tin-based alloy matrix is 0.8 or more and 2.5 or less, and a volume ratio of the composite filament to the copper-tin-based alloy matrix is 0.3 or more.

Claim 10 (new): The aggregate according to claim 9, wherein:

the niobium alloy is a first niobium alloy, and the filament reinforcing material includes a second niobium alloy, tantalum (Ta), tantalum alloy, tungsten (W), tungsten alloy, titanium (Ti), titanium alloy, molybdenum (Mo), molybdenum alloy, vanadium (V), vanadium alloy, zirconium (Zr), zirconium alloy, hafnium (Hf) or hafnium alloy.

Claim 11 (new): The aggregate according to claim 9, wherein the composite filament has a diameter of 15 μm or less.